

## **ABSTRACT**

*In this research, the stock price index prediction with Deep Belief Network (DBN). method will be discussed. This study uses Compositon Stock Price Index (CSPI) index of Indonesia's stock market. These experiments are based on historical daily data in 5 years. Prediction done using Restricted Boltzmann Machines (RBM) RBM two stages and three stages, with the input of data using the  $(20 + ri)$  and  $(40 + ri)$  with the number of neurons  $(n = 10)$   $(n = 50)$ . By using Deep Belief Network (DBN) result obtained Root Mean Square Error (RMSE) ten experiment. Obtain data results  $(20 + ri)$  with  $(n = 10)$  with two stages RBM 0.18921 and tree stages RBM 0.17912. Obtain data results  $(40 + ri)$  with  $(n = 10)$  with two stages RBM 0.1804 and three stages RBM 0.17118. Obtain data results  $(20 + ri)$  with  $(n = 50)$  with two stages RBM 0.16996 and three stages RBM 0.16996. Obtain data results  $(40 + ri)$  with  $(n = 50)$  wirh a two-stage RBM 0.17781 and three-stage RBM 0.16904 RBM. So it can be concluded that the RBM three stages better than RBM two stages, and a great value neurons that affect the results of prediction.*

**Keywords:** *Prediction of stock, Compositon Stock Price Index (CSPI), Deep Belief Network (DBN).*